

Figure 2

300

Color mean (i.e. red)	$F_1(P_i)$	$\frac{1}{N_i} \sum_{p_k \in P_i} R(p_k)$	301
Volume	$F_2(P_i)$	$\bigcup p_k, p_k \in P_i$	302
Surface	$F_3(P_i)$	$\sum p_k \cap p_l$ $p_k \in P_i, p_l \in P_i, i \neq j$	303
Compactness - 1	$F_4(P_i)$	$F_2(P_i)/\text{surface}^2$	304
Compactness - 2	$F_5(P_i)$	$F_2(P_i)/\text{maxcord}^2$	305
Vertical motion	$F_6(P_i)$	$x_{first, i} - x_{last, i}$	306
Horizontal motion	$F_7(P_i)$	$y_{first, i} - y_{last, i}$	307
Route length	$F_8(P_i)$	$\sum_t T_i(t) - T_i(t-1) $	308
Average x position	$F_9(P_i)$	$\frac{1}{N_i} \sum_{p_k \in P_i} x$	309
Average y position	$F_{10}(P_i)$	$\frac{1}{N_i} \sum_{p_k \in P_i} y$	310

Figure 3

400

Average distance	$F_{11}(P_i, P_j)$	$\frac{1}{N_i \cap N_j} \sum_i \Delta d_{ij}(t)$	411
Variance of distance	$F_{12}(P_i, P_j)$	$\frac{1}{N_i \cap N_j} \sum_i (\Delta d_{ij}(t) - F_{11}(P_i, P_j))^2$	412
Maximum distance	$F_{13}(P_i, P_j)$	$\max \Delta d_{ij}(t)$	413
Average change in distance	$F_{14}(P_i, P_j)$	$\frac{1}{N_i \cap N_j} \sum_i \left \frac{\partial \Delta d_{ij}(t)}{\partial t} \right $	414
Direction difference	$F_{15}(P_i, P_j)$	$\ T_i(1) - T_i(N_i) - [T_j(1) - T_j(N_j)]\ $	415
Compactness ratio	$F_{16}(P_i, P_j)$	$F_4(P_i \cup P_j) / F_4(P_i)$	416
Mutual boundary	$F_{17}(P_i, P_j)$	$F_3(P_i) + F_3(P_j) - F_3(P_i \cup P_j)$	417
Mutual volume	$F_{18}(P_i, P_j)$	$F_2(P_i) + F_2(P_j)$	418
Color difference	$F_{19}(P_i, P_j)$	$ F_1(P_i) - F_1(P_j) $	419
Coexistence	$F_{20}(P_i, P_j)$	$\sum_i i_i \wedge j_i \begin{cases} T_i(t) > 0 \Rightarrow i_i = 1 \\ T_j(t) > 0 \Rightarrow j_i = 1 \end{cases}$	420

Figure 4

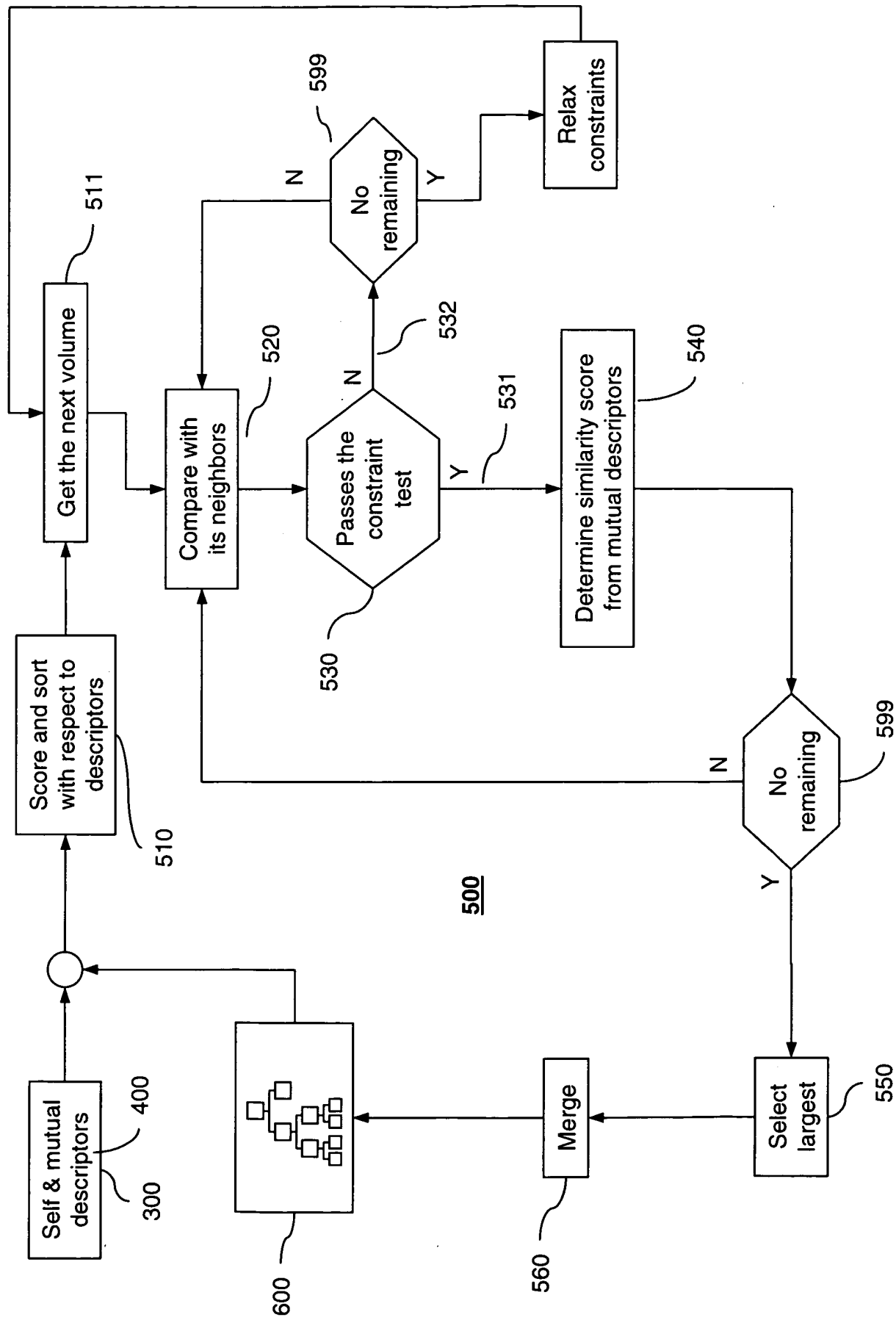


Figure 5

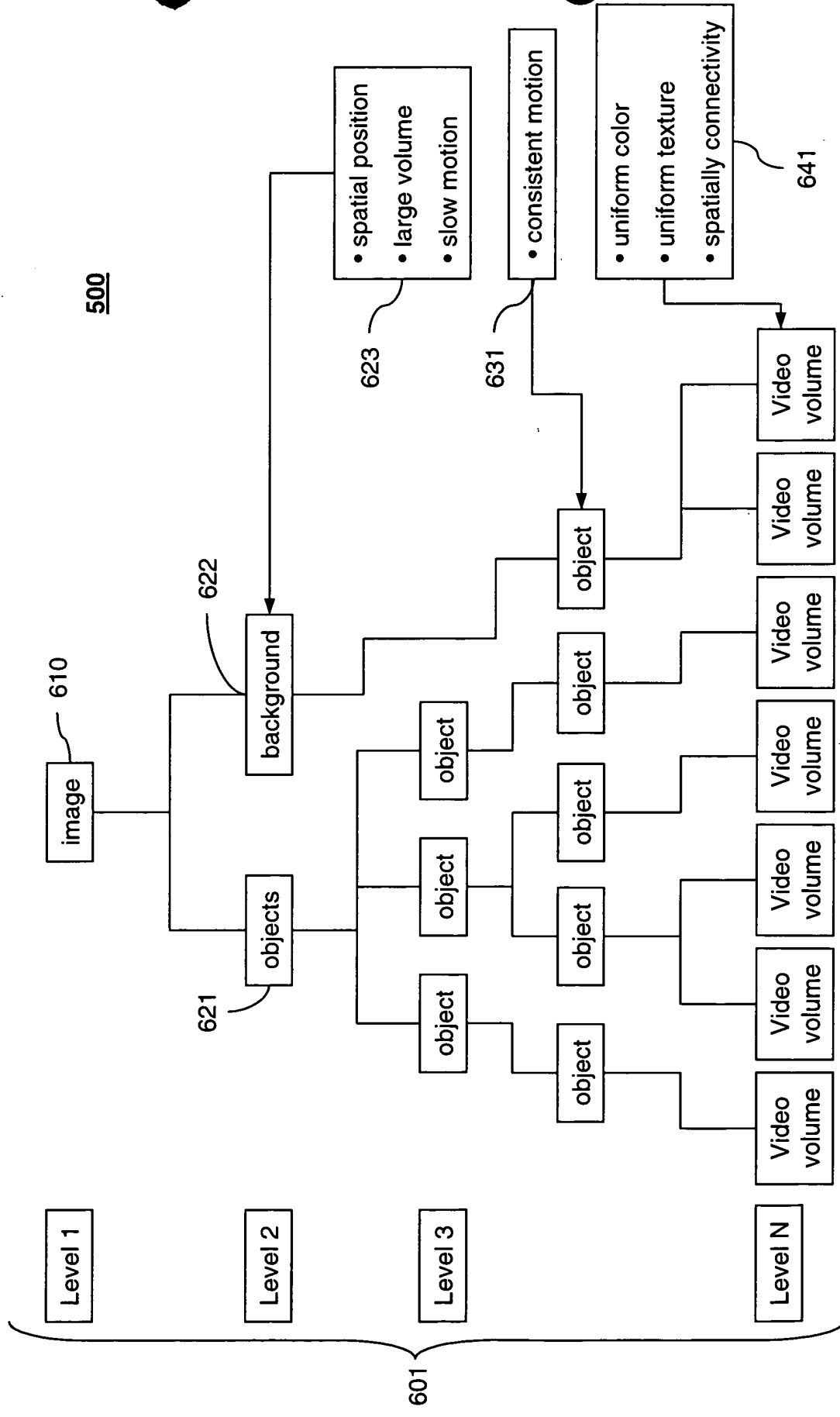


Figure 6

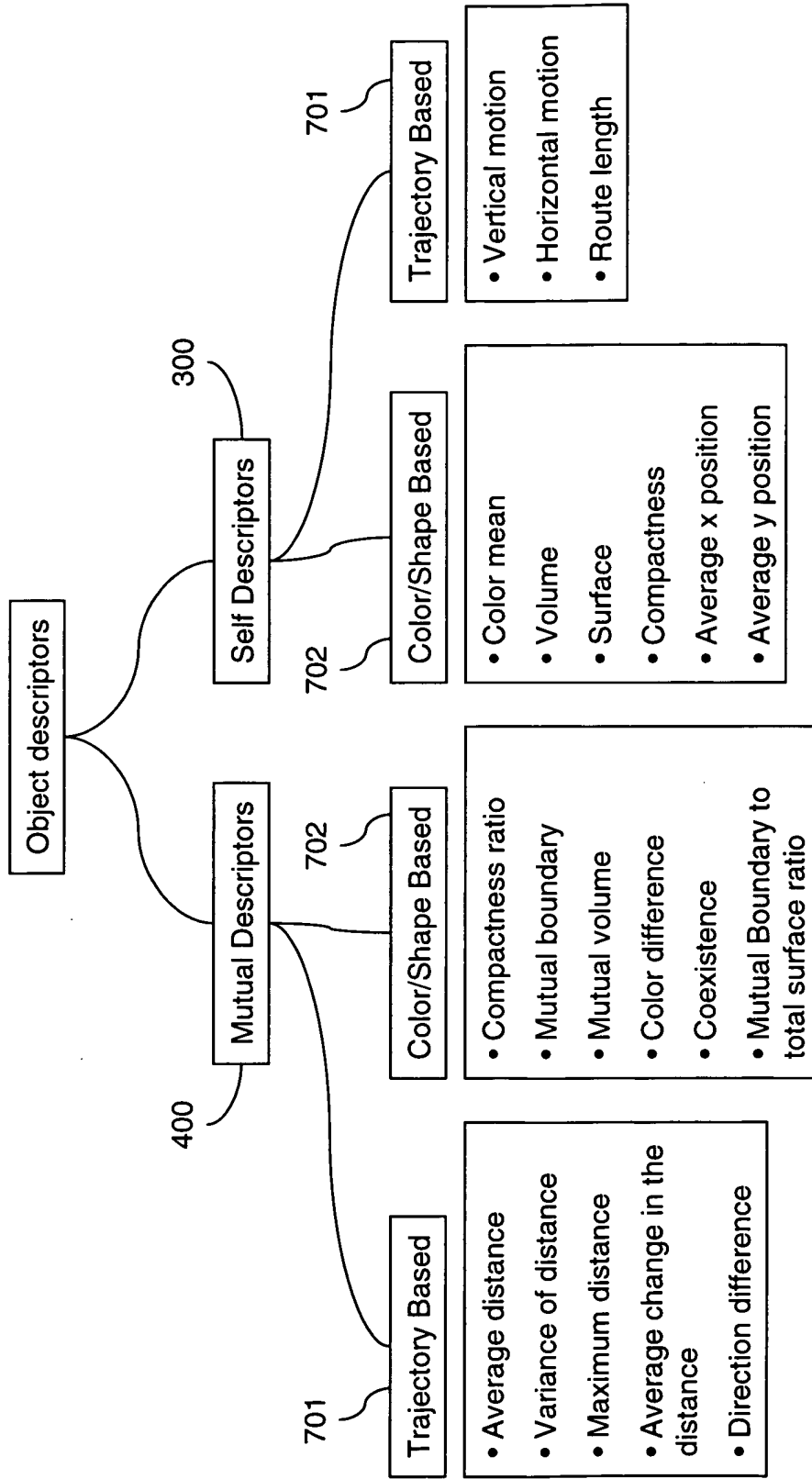


Figure 7

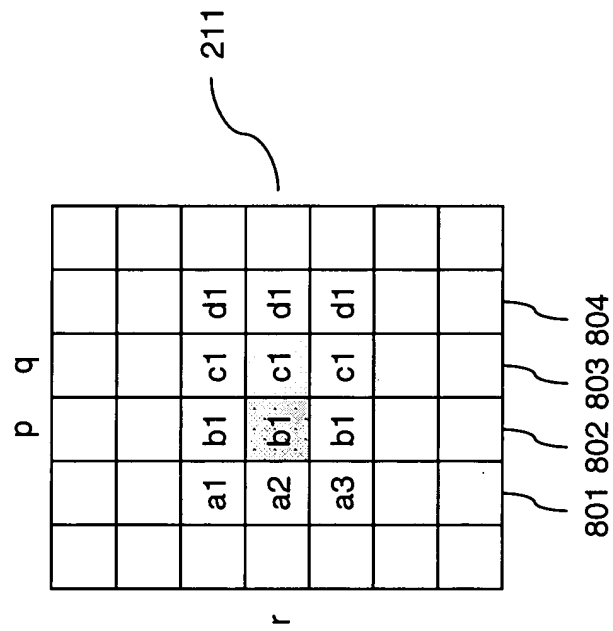
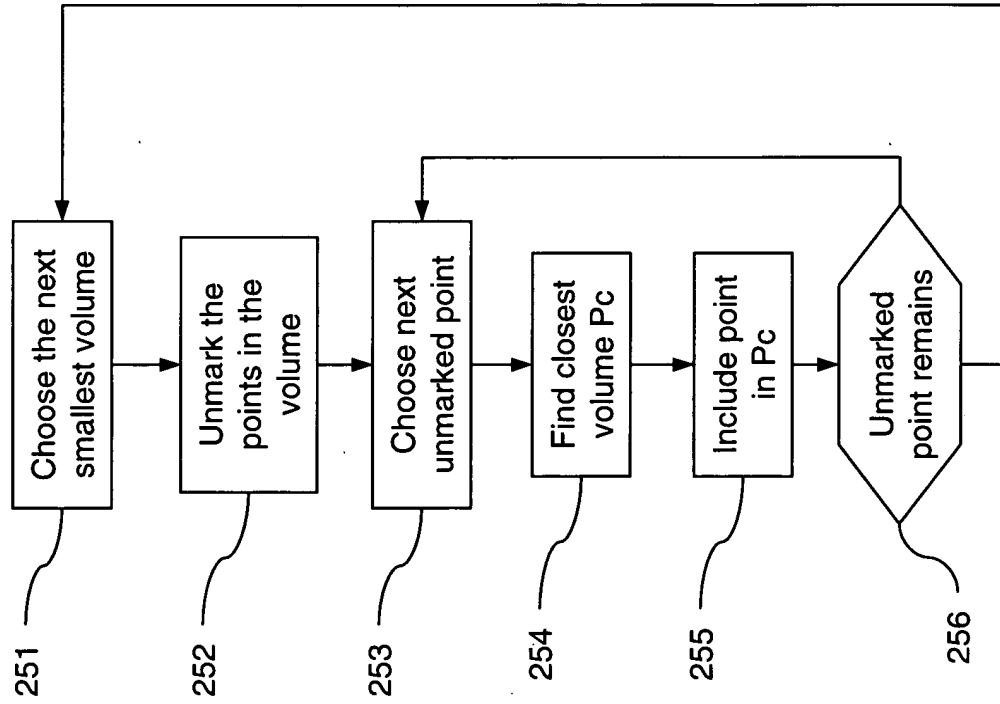


Figure 8



250

Figure 9